

Trim System Fixes

The Answers My Friend are Blowing in the Wind

Winder and finishing/converting trim systems are often tasked with handling multiple grades, basis weights, trim widths, and process speeds. Additionally, many systems are operating with faster process speeds and/or changes in trim material compared to the original design. This issue of *SpinTech* will cover some common issues and potential solutions.

FIXED INDUCERS

Many venturi type trim systems are installed with fixed inducers on each trim line. This is appropriate only when each trim chute is equal distance from the trim blower. When the blower is installed such that its distance from one trim chute to the other is different, then the trim chutes will have unequal trim air velocity and vacuum. A fixed inducer also does not enable fine tuning during installation for changes in duct routing (often encountered due to unforeseen obstacles).

A quick and relatively inexpensive solution is to install adjustable inducers.

A new adjustable inducer can be designed for the trim widths, basis weights, grades, and process speeds now in use, and potentially expected in the future. It can also be designed for use with the existing blower and ductwork. Two new inducers can typically be installed in an existing system in less than eight hours. They will be preliminarily set according to the air flow & velocity models based on the application criteria, and then fine tuned at start-up. Once tuned, they do not require any additional adjustments. But if significant changes to the process do occur in the future, the inducer can be adjusted to accommodate them.



Adjustable Inducer

TRIM DUCT PLUGGING

Every trim system no matter how well designed will experience plugging in the ductwork, and more often than anyone wants. Systems with welded and/or flanged ductwork are difficult to open up and clean out.



New ductwork is available with O-ring sealed quick-clamp connectors making it easy to quickly remove a section or sections of ductwork for clean out. The photo on the right shows a Quick-Fit Site Glass (another good addition to your system) with the security pin fastened quick clamps. Under each clamp is an O-ring to provide a positive seal. When necessary, just remove the security pin, open the quick-clamp, and remove the duct section(s). Quick-fit duct work and site glasses are available in various lengths and diameters to fit the majority of existing installations. Adapter flanges are also available to be welded in place of existing welded or bolted connections.

Quick Fit Site Glass

Another solution is a section of ductwork with a clean-out door. The clean out section shown here is also perforated. It is typically installed close to the point where the trim duct enters the pulper. It reduces air entering the pulper about 17% reducing excessive air associated problems (dust, floating trim pieces, etc.).



Perforated Clean Out Section

EXCESSIVE AIR INTO THE PULPER

Blowing dust and trim pieces from the pulper due to excessive trim system air creates house keeping, production and health problems. Simple systems are available to extract air from the pulper, and clean it of dust and trim particles for exhausting it into or outside of the plant.



Wet Scrubber System

The system shown here extracts air from the pulper and conveys it into a wet cyclone scrubber. The air is fed tangentially into the scrubber creating a cyclonic air stream. Water mists are injected into this air stream. The water laden dust and trim particles become heavy and fall out of the air flow into the bottom of the cyclone and are pumped as a slurry back into the pulper. The dust and trim free air is exhausted, in this case into a canvas bag. The bag does not require service/emptying and acts only to cushion the exhausted air. Depending on local regulations, it may be possible to

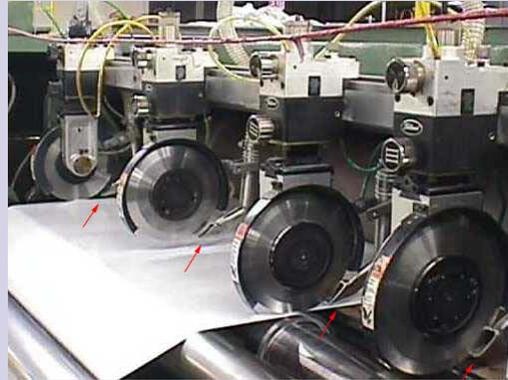
exhaust the cleaned air outside of the building.

When space and conditions permit, similar wet or dry cyclones can be mounted over the pulper. In these cases, the trim itself is sufficiently heavy to fall out of the cyclone into the pulper.

DUST

OSHA is now concentrating their attention on dust in high risk applications such as grain elevators. But OSHA has also begun to turn its sights onto dust in other industries such as paper, and especially tissue mills. We can expect mandates and regulations on this in the not too distant future.

The best method to control dust is to capture it at the source. In the case of a winder, the source is at the slitters. It is difficult to see in the photo but these slitters have been equipped with dust extraction orifices directly behind the slitter blades. Each orifice is connected with flex-hose to a main plenum which is connected to and obtains its vacuum from the main trim system. In operation the orifice vacuum is operational any time the main trim system fan is turned on and removes the majority of the slitter generated dust. The vacuum in the orifices is low enough that only dust is extracted without inducing any unwanted affects on the sheet or slit quality.



Slitter Dust Extractors

Where dust is generated on the machine, as is the case in tissue mills, custom designed systems with air foils, vacuum hoods, etc. are employed.

INSTALLED and FORGOTTEN

The trim system is often low on the list for maintenance and upgrade attention and funds. But as the above may illustrate, significant improvements can be realized with minor investments in new components.

Spinnaker is the Paper Industry Distributor for AirTrim, Inc.

Minnesota, Wisconsin, Michigan, Illinois, Indiana, & Ohio

AirTrim, Inc. of Springfield OH designs and manufactures trim and dust control and conveying systems. As the Distributor, Spinnaker provides applications engineering, system and component sales, installation, spare parts, field service, and inspections.



To download the AirTrim, brochure, go to:
www.airtrim.com.

You can also email us at: info@spin-corp.com.
Or phone us at: 920-265-0941.

Inspection Services

Spinnaker provides complete inspection services and audits for existing trim systems. An inspection includes a follow up report with details & photos, description of problem conditions, and recommendations for improvements. If there are any issues with an existing system, please contact us at: info@spin-corp.com ;or call 920-265-0941.

New Address

Spinnaker has relocated. Our new mailing and billing address is:

Spinnaker Corporation
3876 Whitetail Court
Hobart WI 54155
Ph.: 920-265-0941
Fax: 920-227-4178

Our shipping addresses remain the same but are listed here for your convenience:

Slice Lip Refurbishing
Spinnaker Corporation
1504 Sixth Street
Beloit WI 53511

Gears & Mechanical Work
Spinnaker Corporation
3976 Packerland Drive
De Pere WI 54115

The *SpinTech Newsletter* features articles on headbox service & components, calender rolls, suction rolls, suction roll shells, mechanical drives, winder trim systems, and roll covers. We look forward to providing information that we hope will be helpful to you in your job.